AFRICA TRADE and DEVELOPMENT

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INTER-TERRITORIAL ROADS

Port Development

Air Cargo to Africa

Goods and Services

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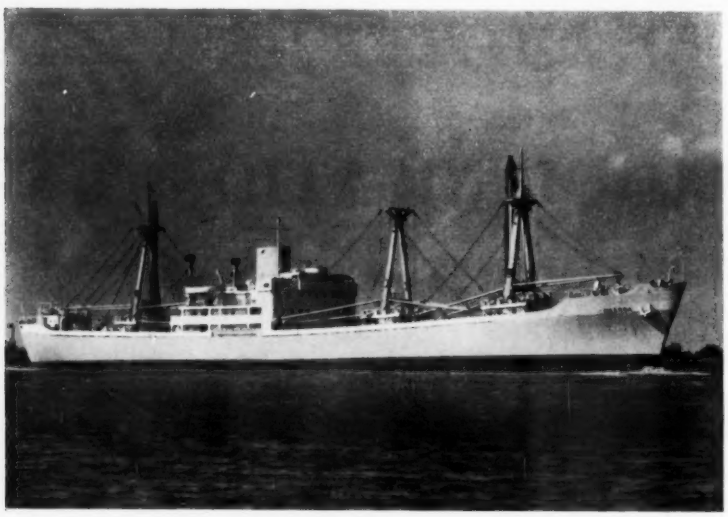

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AIR COMMUNICATIONS IN WEST AFRICA

from Nigerian Airways Ltd (Lagos)

NIGERIAN AIRWAYS was formed as a new company in October 1958, but has a much longer history than its inception date would seem to indicate. The Airline, now operates internal air services in Nigeria, a West Coast service travelling as far north as Dakar in French Senegal, and international services to Europe in pool with BOAC. Originally it formed the nucleus of the former West African Airways Corporation which was set up as far back as 1946. WAAC as the Airline was known to all and sundry in those days, initially developed and operated all the air communications up and down the West African Coast, including those in Ghana which are now operated by Ghana Airways.

Although considerable pioneering work was carried out by WAAC in the early days, some even earlier initial route building had been done by Imperial Airways. As far back as 1925, Imperial Airways carried out surveys from the Guinea Coast inland as far as Khartoum. Early in 1936 Imperial Airways inaugurated a service Lagos to Khartoum to connect with their services to Southern Africa. During the next two years the service was developed along the West Coast from Lagos to Accra, Takoradi, Freetown and Bathurst, the beginnings of what is now the famous West Coast Route which Nigerian Airways jointly operates with Ghana Airways.

Even during the war, the post-war development of civil aviation in West Africa was not overlooked. In 1945, as a result of the investigations of a special committee, extensive surveys were carried out by both the British Ministry of Civil Aviation and the Colonial Office. The following year, 1946, the West African Council recommended that a West African Air Transport Authority be established and that the four Colonial Governments should jointly finance a Corporation to operate and develop air services within and between Nigeria, the Gold Coast (now Ghana), Sierra Leone and the Gambia.

Before the end of the war, RAF Transport Command was operating a twice weekly "bush" service from Accra to Lagos, Port Harcourt, Enugu, Jos and Kano, returning direct to Accra via Lagos. This continued until the middle of 1946 when Transport Command was withdrawn. There was an overlap period between 1944-1946 when BOAC participated in the operation of commerical services through West Africa, but the "bush" service was suspended on the withdrawal of Transport Command and BOAC dropped the Lagos-Dakar route by changing the routing of its UK-West African service from Coastwise to across the Sahara Desert.

West African Airways Corporation, on its formation in 1946, took over the "bush" service route using aircraft on charter from BOAC, since at this stage the Corporation had no aircraft of its own.

WAAC had to wait until September 1947, for the delivery of its first aircraft. The de Havilland Dove was considered best suited to the Corporation's commitments, and eleven were delivered between 1947-1948. The Doves took over the internal Nigerian Services and the Lagos-Dakar route from the chartered BOAC aircraft and operated the Gold Coast services. The first scheduled flight operated by WAAC in its own aircraft was on the 28th of October 1947.

Six Handley-Page eighteen seater Marathon aircraft were ordered in 1948, their delivery was considerably delayed and in the interim WAAC operated two Bristol Freighters belonging to the West Africa Command and obtained two Bristol Wayfarers through the Ministry of Supply. By 1952 WAAC was operating with her original Doves and five Bristols, an additional Wayfarer having been purchased early in that year.

The Bristol Freighters operated the famous WAAC "Flyer" service. This was a second-class service, the aircraft being fitted out to carry fifty-six passengers. The "Flyer" service which was initiated on the Corporation's routes in the Gold Coast was later extended to Lagos, Port Harcourt, Calabar, Tiko and Kano. The Doves were concentrated on internal services in Nigeria and two Bristol Wayfarers from Lagos operated to Khartoum and the route along the coast from Lagos to Dakar.

Continued traffic growth and experience gained with chartered DC 3s led the Corporation to acquire seven of these aircraft in 1957 and to sell the Wayfarers and Doves. The fleet then stood at eight Herons, purchased to replace the Doves, seven DC 3s and two Doves, the later being retained for survey and charter work only. Today, Nigerian Airways' domestic and West Coast services are operated by the Herons and the DC 3s.

The route pattern has remained basically the same throughout the years of development. The services operate from Lagos to the West along the coast, to Northern and Eastern Nigeria and the Cameroons and further services operate from Kano to the East and within the Northern Region.

WAAC operated a service from Lagos to Khartoum from 1950-1953 at the request of the Colonial Government, to facilitate communications between East and West Africa, but the traffic potential did not justify the losses involved. It was not until 1957 that WAAC really entered into the field of international flying with a direct service from Lagos to London using Stratocruisers and Argonauts on charter from BOAC. The international service began on a once weekly basis, increased to twice weekly in April 1958, and

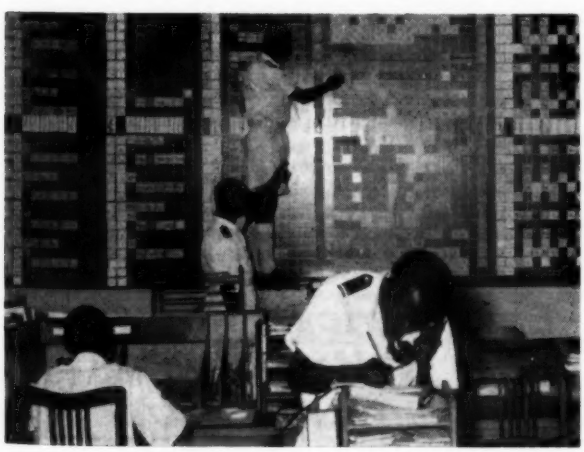
today three services weekly are flown on the London-Lagos route. The aircraft used are Britannia 102s on charter from BOAC and the routes include stops at Frankfurt, Barcelona, Rome and Kano in Northern Nigeria, according to the routing.

The most recent development in the air communications of West Africa is Sierra Leone Airways, which is operated and managed by Nigerian Airways on behalf of the Government of Sierra Leone. Operations began in January 1958, as the outcome of extensive surveys to determine route pattern and traffic potential, carried out by "WAAC" early the previous year. Using three Rapides, regular services from Freetown to Port Loko and Magburaka and to Bo, Kenema and Daru, some twenty miles from the Liberian border, are regularly operated. The "Rapides", though only eight seaters, have met the requirements of those people to whom time is money in a country served hitherto by only a narrow gauge railway system and winding roads.

Nigerian Airways operates its own Maintenance Workshops at Lagos (Ikeja) Airport, where in addition to its own aircraft, engineering work, the Company also handles that of most of the major operators who pass through Kano and Lagos Airports. Here too, all the DC 3s have been completely refitted throughout. These aircraft are equipped to carry large quantities of mail and freight, a pressing need in a country whose ever expanding industrial programme calls for the rapid movement of supplies and equipment and perishable goods. The newly equipped DC 3s are also designed to be used as "freighters" if required, the seating being so constructed as to be easily moveable, folded up and temporarily attached to the sides of the cabin.

Nigerian Airways is well served by its own radio teleprinter service connecting all the main centres in Nigeria (and through to London) by its own modern booking offices and by a group of Nigerian Airways appointed Travel Agents.

Part of the Indicator Board of the Air Booking Centre, Lagos



The Benguela Railway and the Port of Lobito (Angola)

The Atlantic coast port of Lobito in Portuguese West Africa is growing in importance year by year, and more and more shippers and shipping companies are turning to "The Lobito Route".

For this route is the "Save Time" route from America and Europe to the prosperous and expanding copperbelts in Rhodesia and the Belgian Congo.

It is only in the past twenty years that Lobito has developed into the major port on the west coast of Africa, south of the Equator. For that it can thank the Benguela Railway.

This railway was the dream of a Scot, Robert Williams. By the end of the last century, he had organized many prospecting and exploring trips through the heart of Central Africa. On one of them the rich mineral deposits in the Katanga had been found—the find that was eventually to turn Central Africa into one of the richest and most highly productive mining areas in the world.

At that time, the development of Central Africa was in the hands of a few pioneers and explorers. Those who had come to Rhodesia had come from the south, and their lines of communications ran southwards. Those who had come to the Belgian Congo had come up the Congo River and they looked to the rivers of the Congo as their natural highway.

But Williams had other ideas. He believed that there should be a fast, direct route from the mineral areas westwards to the Atlantic. And the fastest method of travel was by rail.

He persuaded the Portuguese Government to grant him a concession to build a railway through their colony of Angola from Lobito to the Belgian Congo border.

In 1903, the work began. The plotted course of the Railway lay through some of the most difficult country in the world, and had to climb from a coastal plain up to a plateau which in parts is more than 5,000 feet high.

The builders were hindered by this rough country, by not having the technical knowledge and machines of today, and by the first world war. It was, therefore, not until 1928 that the Railway finally reached the Belgian Congo border—and there it stopped for another three years waiting for the Belgians to connect it to their railway system, and thus, to that of Rhodesia.

In 1931 the connection was made. Central Africa at last had a direct rail link with the Atlantic coast. The port of Lobito, however, had only developed slowly since its first wooden quay capable of taking one ocean going ship and two coasters had been built in 1905.

The Portuguese Government, who are responsible for the operation of the port, then voted 100,000,000 escudos for the development of the port, and by 1943 Lobito had permanent quays at which six ocean going ships could be handled at one time.

The port facilities had not been forgotten either. Eleven large warehouses were built, capable of storing nearly 50,000 tons of cargo. Large areas were set aside for storing coal and mineral ores in the open. Cranes were installed and a marshalling yard. The new developments paid off as the Portuguese Government had anticipated. In the ten years, 1938-1948, the total overseas trade through the port more than doubled from 209,700 metric tons to 472,100 metric tons.

Then came the boom in copper, adding impetus to mining development in the Congo and Rhodesia. With the growing output at the mines, the power plants of the two areas ran short of coal. American coal flooded in—through Lobito. The port and the Railway worked overtime to clear the cargoes.

(*continued on page 9*)

East African Railways and Harbours

Current Services

Today the East African Railways and Harbours carry passengers and freight over 3,403 route miles of railway, 6,311 route miles of inland waterways and 2,678 route miles of roads. They also control and operate the five principal sea ports of East Africa—Mombasa, Tanga, Dar es Salaam, Lindi and Mtwara. To provide these services they own 459 locomotives, 981 carriages, and 9,543 wagons, 12 inland waterway ships and over 100 other craft and 78 passenger and 158 freight road vehicles. They also own and operate five hotels in Tanganyika and Uganda and administer industrial areas in Kenya.

Brief History

The East African Railways and Harbours were formed by the amalgamation in May 1948, of the Kenya and Uganda Railways and Harbours and the Tanganyika Railways and Port Services. Construction of the railway system in East Africa can be said to have started in Tanganyika, then German East Africa, in 1891, from Tanga to Moshi, though this was not completed until 1911. The main line from Mombassa was started in 1895 and reached the site of what is now the City of Nairobi in 1899, and Kisumu, then Port Florence, on Lake Victoria, in 1901—a steamer service thereafter providing the connecting link with Uganda.

Tonnage Handled

The tonnage handled by the railway (including rail, road and inland marine services) and by the harbours over the ten year period 1948-1958, gives some idea of the growth of the services.

	Railways		Harbours
	Deadweight tons	*Public ton miles*	*Harbour tons*
1948	2,583,000	774,710,000	3,188,000
1958	3,902,000	1,516,847,000	4,350,000

Development

Since 1948 the Railways and Harbours have pursued a vigorous policy of expansion and re-equipment, the development programme, being supported mainly by loan authorizations amounting to £72¾ million, is designed to cover the period up to the end of 1960.

The latest loan authorization of £8½ million will be spent on the following programme combining both harbour and railway works :

The provision of two additional deep water berths at the port of Mombasa, following the completion of a four-berth quay wall which is now under construction.

New locomotives and rolling stock, including diesel locomotives, for the busy Nairobi-Nakuru section which will increase capacity and overcome water supply difficulties : relaying of several sections of the system in heavier rail : improvements to signalling and water supplies : development of marshalling yards and terminal facilities to increase their capacity : development of mechanical workshops, inland water services and improvements to hotels, and roads.

If traffic develops as expected, the East African Railways and Harbours will be obliged to continue to undertake further developments on a fairly extensive scale if the transport capacity is not to be allowed to fall behind the demands of the public and industries they serve.

EAST AFRICA

for exciting travel...

Nowhere can travel be more exciting than in East Africa, and East African Railways and Harbours arrange a series of all-inclusive holidays which take in many of the incredible sights to be found on the East African lakes, at the head waters of the Nile and in the game reserves, perhaps the richest in wild life in the world.

and service to industry

But there is more than big game in East Africa. As bigger crops of coffee, cotton, sisal and tea are grown, and as greater quantities of minerals are mined, so increased spending power, particularly of the 20,000,000 African population, leads to the growth of local industry to meet new demands for all kinds of goods. The transport needs of agriculture, mining and industry are the prime concern of East African Railways and Harbours. Last year nearly 4,000,000 tons of public traffic moved over their 12,000-mile nation-wide transport system, which is constantly being developed to serve the country's expanding economy.

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GENERAL DEVELOPMENTS

Report of the Mission to Ghana

The report of the UK Trade and Industrial mission, appointed by the President of the Board of Trade to visit Ghana last March, was published on 22 September. The mission, led by Sir George Binney of the United Steel Companies, was invited by the Ghana Government.

The object of the mission was to re-affirm the United Kingdom's interest in expanding trade with Ghana and to study ways and means in which British enterprise might assist development in Ghana.

In their report the mission express the hope that trade and industry in Britain will not only be interested in their observations and recommendations, but will also find the survey of the background and economic conditions in Ghana useful for reference.

In their view there is a considerable fund of goodwill towards the United Kingdom and there are undoubtedly opportunities for investment by United Kingdom manufacturers and trading concerns. On the trading side they note the growth of competition and suggest particular points that British manufacturers and traders might usefully bear in mind. The Ghana Government's Second Development Plan is likely to offer great opportunities to British suppliers of capital and constructional equipment of all kinds, and an appendix to the report lists a number of projects to be undertaken in the public works field. The expansion of electrical generating capacity is also likely to lead to good opportunities for sales both of generating equipment and of electrical consumer goods.

The mission devotes special chapters to agriculture and education, both because of their special place in the Second Development Plan, and because of their vital importance in the Ghana economic scene.

Railway Expenditure in Nigeria

The Nigerian Railway Corporation have pointed out that while the capital programme for existing lines between 1955-1960 was estimated at £21.8 million, the total figure is more likely to be in the range of £28 million. This is due to rising costs and the fact that the original plan has had to be widened in scope to include additional work. Due to this increase, work valued at £4.3 million has had to be deferred and these projects will receive high priority after 1959-1960. A very tentative plan has been drawn up covering 1954-1965, the total sum of which even now calls for an expenditure of £18.8 million (including the £4.3 million).

The IBRD has agreed to loan £10 million to assist in the building of a 400 mile extension from Kuru to Maiduguri in Bornu province. This would open up a potentially fertile area. The loan will, however, not meet fully the capital programme and a further £9.5 million has been allowed in the 1962 Economic Programme. For the period after 1961-1962 the Nigerian Government and the World Bank have reached agreement for the latter to provide funds to enable the completion of the railways improvements and the extension to Maiduguri should the Nigerian Railway Corporation funds prove inadequate. It is estimated that a further £2.14 million will be required in excess of the Corporation's resources.

World Bank Mission to Rhodesia

A World Bank mission arrived in the Federation in September to investigate South Rhodesia's application for £2.0 million to enable it to put into effect the Land Husbandry Act. This Act will settle African farmers on their own land. The mission will study the economic pattern and inspect those areas where the supply of water is a difficulty.

Last year the World Bank loaned £6.7 million to the Federation for the development of the Rhodesian Railways. In addition £50 million have been invested in the Federation for other projects including the Kariba hydro-electric scheme.

Oil Struck in Western Nigeria

For the first time, appreciable quantities of oil have been found in the Western Region of Nigeria, at Ughelli in the Delta Province. The strike was made by the Shell-BP Petroleum Development Co. of Nigeria, Ltd. Drilling has been carried on for the past five years, this was the sixth well to be drilled in the Region.

Ughelli is some 60 miles from the other sources of Nigerian oil. Further efforts will be made to discover whether there are further supplies in the area. Preparations are now in hand to sink a well at Nun River some 35 miles north-west of Brass, near the coast.

Western Nigeria Development Corporation

The Western Nigeria Development Corporation has reported that during the financial year 1957/1958 it invested over £3½ million in agriculture and industry. By 31 March 1959, agricultural plantations owned by the Corporation covered 24,718 acres planted with oil palm, cocoa, rubber, coffee, citrus, cashew and pineapples ; 2,397,728 seedlings were grown at the nurseries.

Rubber latex produced during the period under review showed an increase of about one million pounds. Over 2,007 tons of fruit from the Corporation's farms were processed by the Lafia Cannery in Ibadan.

East African Airways

East African Airways, announcing the number of passengers carried between 1 January and 12 August 1959, give the figure as 77,817, an increase of 6,173 over the same period for 1958. The international routes have shown the greatest increase.

South Africa Trade with Communist Countries

The possibilities of marketing surplus products in Russia and the communist countries is being studied by the Department of Commerce and Industries of South Africa. The Minister of Economic Affairs has said that his department's policy is to avoid discrimination in the marketing of exports. A certain trade already exists involving wool, fishmeal and tinned foods and a number of industries are interested in increasing this turnover.

It has been announced that a new company, the International Trading Corporation Ltd., has been formed with the specific purpose of trading with communist countries. It will export South African goods and import commodities not available locally.

Durban Bay Developments

A start is to be made soon on a £1 million development scheme in Durban Bay to accommodate 50,000 ton super-tankers, according to an announcement by the Railways Administration. This scheme, which will bring Durban into line with other major world seaports, will involve the deepening of the turning basin, construction of a new 800-foot deep water wharf, and the reclamation of about 100 acres of land south-west of the causeway to Salisbury Island in the middle of the bay.

Belgian Congo Plantations

Together with a German group and a number of Belgian and Congolese companies, N.V. Deli-Maatschappij, a Netherlands tropical plantation company in Amsterdam, has decided to take an over Fr2.5 million share in the Congolese limited liability company. Agriquateur which was founded with an authorized capital of 200 million Congolese francs.

The company will operate rubber, cocoa and coffee, and possibly palm oil plantations. The sites to be planted are situated between the rivers the Lomami and the Tehuapa in the Belgian Congo.

Expanding Israeli Trade

Mr. Joseph Shickler, Director of the Foreign Trade Division of the Israeli Ministry of Commerce and Industry, who has just returned from a study tour of Ghana, Liberia, Nigeria, and the Belgian Congo, has stated that at least thirty branches of Israel's industry could export their products, so long as a high standard of quality could be maintained.

Mr. Shickler found that Israel products are welcomed on the markets which he visited, especially building materials, including cement. In Ghana, Israeli chain stores are being set up which will sell all kinds of products. Following the trade agreement signed with Nigeria recently, it is also hoped to increase the sale of Israel goods to that country.

INTER-TERRITORIAL ROADS IN AFRICA

by W. G. Kennedy, Deputy Chief Executive, International Road Federation (London)

HISTORICALLY THE GREAT AFRICAN CONTINENT has emerged area by area and territories have tended to grow up as separate, self-contained economic and social entities. This has been the inevitable result of the great distances to be covered, the physical barriers and the climatic conditions, all of which have mitigated against any systematic development. The existing communication network has, in its turn, shown the same lack of coordination over a wider area. Instead of inter-territorial road links, emphasis has, in the past, been on linking the producing centres in the interior with the main shipping ports, and roads, in consequence, have tended to run in an East-West direction.

Today, however, the whole pattern of African life is changing. There is a move towards greater independence and with it a trend towards greater self sufficiency with countries such as South Africa, Southern Rhodesia, Ghana and Nigeria, striving to develop their own industries for the production of consumer goods instead of relying entirely on overseas products.

An important factor which has contributed substantially to the need for altering the hitherto traditional pattern of export and import, can be found in the fluctuating and ever rising prices of raw materials in overseas producing countries. Africa is now increasingly compelled, for economic reasons, to make the maximum use of her own home produced raw materials which she has in abundance.

At the same time, in the individual territories, the market for goods and materials is still often insufficient to make production an economic proposition. A solution to this lies in inter-territorial trading which is at present virtually non-existent. But to make this feasible, improved communications are a *sine qua non*, and it is here that new roads can play a vital and invaluable role, both because of their flexibility and because of the comparative speed and economy with which they can be constructed.

The importance of developing the African road transport network as a coordinated whole in patent—experience in Europe and the USA has shown, and is still showing, that this policy is the one which ultimately must be adopted if the transportation lifelines of a country, or a continent, are to function effectively.

At the first meeting of the United Nations Economic Commission for Africa, held in Addis Ababa in January 1959, the International Road Federation submitted a paper on inter-territorial routes in Africa, and the view was generally accepted that priority must be accorded to this aspect of development. Moreover, five national delegations from Ghana, Nigeria, Sierra Leone, Liberia and the United Kingdom, submitted a recommendation regarding a specific project and urged that the Economic Commission for Africa should send a mission to the West Coast to investigate the possible transport links needed to promote and encourage widespread trade in the area.

The urgency of providing improved North-South road communications was emphasized again at the African Regional Road Congress convened in Salisbury in May 1957 by the Road Federations of East Africa, of the Federation of Rhodesia and Nyasaland, and of South Africa, together with the International Road Federation.

The meeting recommended improvement to a heavy duty standard of the 3,500 mile Cape-Nairobi road. It was considered that to make this route suitable to carry vehicles with an axle loading of at least 18,000 lb. would greatly stimulate trade between South, Central and East Africa. At present, except in South Africa, only relatively short sectors can be so used.

The cost of improving this particular route was put at some £10 million. As against this expenditure the benefits accruing from the improvements could, on the other hand, run into hundreds of millions of pounds. According to South African estimates, by 1966 trade between the Union and the other territories concerned, could be expected to increase from the 1956 level of some £95 million, to £190 million. A further 25% increase, say £60 million, would, in addition, be likely to accrue as a direct result of an improved Cape-Nairobi route. Similar or greater benefits could be expected to derive from expanding trading between the other territories concerned.

In East Africa the growing drive towards extensive agricultural production is only limited by the restricted markets for produce available. Central Africa, on the other hand, is committed to a policy of industrial expansion. It is clear, therefore, that trade interchange between these two territories could increase very considerably the potential consumption of both. The market for consumer products manufactured in Southern Rhodesia, for instance, could increase threefold if to the home market, numbering 7½ million inhabitants, could be added the 20 million population of East Africa. Conversely from Central Africa would come, in turn, a greater demand for agricultural produce, thereby widening the market for East African commodities.

The one essential needed to bring about this healthy flow, is improved communications. Investment in the improvement of the Cape-Nairobi road. at this juncture, could promote economic and social development in the five territories through which the route passes more effectively than any other form of investment of comparable proportions in any other field. The outlay needed is not large, more especially when it is taken into account that the area to be served covers some 3 million square miles with a population of 60 million.

The West Coast route through SW Africa is another case

(*continued on page 14*)

This high level bridge consists of 7 spans of 75 feet each. Built across the Umzingwane River in Southern Rhodesia it was the last large bridge necessary to bring the Bulawayo-Beitbridge road up to all-weather standard. The old low level bridge can be seen in the background

BENGUELA RAILWAY *(continued from page 5)*

By 1950 the ports of Beira and Matadi could not handle the vast amount of cargo arriving. Ships awaiting a turn round were often delayed many weeks, and one vessel waited more than three months before her cargo was finally cleared.

Shippers turned to Lobito. Hitherto rating difficulties had greatly restricted the quantity of traffic using the route. As however, the tariffs were adjusted to meet the new and urgent situation, cargo flooded in to an extent that the port and railway were at times overwhelmed by the enormously increased demands made upon them almost overnight.

To meet the ever growing traffic, the Port decided to extend the quays by 270 metres in order to provide additional berthing space for two more vessels. Work was completed in April 1957.

The 1 January 1957 was a date of special importance for Lobito. For the first time since the route was opened 26 years previously, through railway rates to stations in Rhodesia came into operation, greatly increasing its usefulness to importers. Also, copper from the Northern Rhodesian Mines started to be exported via Lobito.

The Port

The harbour of Lobito lies behind one of the sand pits or Restingas that are the most striking feature of the Angolan coast. At Lobito, the Restinga forms a natural breakwater more than three miles long and between 275 and 400 yards wide. It shelters a harbour of two square miles where the depth of water ranges from three to eighteen fathoms.

Ships enter this harbour through a 400 yard wide navigable channel which leads up to the two quays, built in the shape of an "L". The north quay is 552 metres and the south, with the recent extension, 570 metres. Alongside eight ocean going ships can berth.

The quays are well laid out with ample sheds and electric cranes, while two triple track lines lead out to the marshalling yards of the Benguela Railway.

At present the capacity of the port is about 2 million metric tons a year, but later this year its potential will increase sharply to about three and a half million tons, when a mechanical ore loader, which has been built as part of the long-term development of the port, comes into use. It will have a daily loading capacity of 5,000 to 6,000 tons.

The Benguela Railway

The railway runs for 837 miles from the coast to the Belgian Congo border, and its building can claim to be one of the finest railway engineering feats in the world. In the first 50 miles of the route from Lobito, the line climbs from sea level to nearly two thousand feet up the steep escarpment on its way to the top of the Angolan plateau. Until 1948 this first part of the line included a short rack section, but this was closed down in 1947 when a deviation was completed on an easier gradient.

Before the last war, more than three-quarters of the traffic hauled by the Benguela Railway Company was from freight which came from the slowly developing plateau towns of Angola and not, as had been originally imagined, from the Belgian Congo.

It was not until after the last war that the Belgian Congo began to make full use of the Lobito route owing to the great pace of development in Central Africa. In 1958, 454,992 metric tons of minerals, comprising copper, cobalt, zinc and manganese ore from the Katanga Mines in the Congo were carried to the coast over the Benguela Railway.

BY AIR TO AFRICA

from Hunting-Clan Air Transport Limited

THE FIRST RECORDED AIR CARGO—a shipment of fresh cherries—was completed between Baalbeck and Cairo about 1,000 years ago. It was an emergency shipment. The Caliph of Cairo craved for cherries and his governor in Baalback had orchards. In answer to the Caliph's repeated demands, his governor despatched his gift in pouches tied to the legs of 600 pigeons. Distance flown : 400 miles. Cost per pound : no one knows, but the governor wasn't worried about costs.

Air cargo by plane has been widely used for emergency shipments of perishable and high value goods for several decades already. Today, however, more and more of the ordinary commodities of commerce—machinery, toilet preparations, clothing, gramophone records and the like—are being sent by air as a matter of course, and by people who count the costs very closely indeed.

Hunting-Clan Air Transport Ltd., the only British airline to operate an all-freight service to Africa, have found that "urgency" shipments form an increasingly small proportion of the total tonnage carried on their weekly "Africargo" service. An examination of their traffic returns shows that consignors of machinery or agricultural produce, who began using the service in an emergency, are now sending consignments regularly.

Speed in transit influences trade conditions in a number of ways. The first, and most important, is that it can save a shipper money by enabling him to recast the economics of his business. Previously, a concern in Africa which used or sold goods manufactured in Europe had to depend on slow surface transport for its materials.

To safeguard against delays at docks and railway yards in addition to the actual length of time the journey took, the African trader had to build-up large stocks of his essential materials. This called for large and expensive warehousing, supervision and the maintenance of elaborate stock records. Insurance, depreciation and obsolescence all added to the burden. Today's direct all-freight air services enable factory-fresh stocks to be flown out within hours of the receipt of a cable to the European suppliers.

The merchant in Africa can, in fact, run his business on far less trading capital, and he can hope to turn over the capital he does employ far more frequently. An example of how this hidden advantage of air transport worked out in practice was revealed by a survey into the after-sales and spares service for British cars in Africa.

Delays in supplying urgently needed motor spares were putting the British manufacturers at a disadvantage with their Continental competitors, and the field-survey showed that agents had capital locked-up in stocks out of all proportion to the size of their turn-overs. One agent in Nairobi stocked over 10,000 lines of spares and had to order eight months in advance and another in Rhodesia had £250,000 worth of spares.

Companies operating in Africa may also lose money in other ways on account of the distance their supplies have to be brought. Work may be held up for many days on important manufacturing or civil engineering projects if a part proves to be unserviceable. An example of this was the air freighting of a considerable number of replacement parts for a cement plant which had broken down in Rhodesia, while on another occasion a piece of mining equipment weighing 1,500 kg. was flown out in one aircraft in thirty hours in order to avoid substantial losses.

Speed in transit can also be a major factor in the implementation of a tightly scheduled industrial project when supplies must arrive on time and in perfect condition. Sometimes, a decision cannot be taken until the time has arrived when it is desirable to put the decision into effect as quickly as possible. Any means of transport which will shorten the time between these two moments has great advantages to offer.

A further advantage of the speed of air transport is that the goods can be conveyed during the "dead" hours of darkness or a weekend so that production time is not lost. Goods sent from the United Kingdom to East Africa via the Africargo service, for instance, can leave the British factory on a Saturday morning for loading on the Sunday night departure and arrive in time for distribution in the Nairobi shops on Monday.

Speed, however, is not the only factor that affects the cost of shipping by air. Insurance costs are generally lower than by surface transport because of the shorter travelling time, lack of warehousing and less handling required. Considerable saving also can be made in packaging. The goods are carefully handled into and out of the aircraft so that in many cases only the lightest packaging is required for shipment, and the extensive crating normally used for surface transport is rarely needed.

At times, no packaging is need at all. Hunting-Clan, for instance, have devised a lightweight wardrobe as part of the aircraft's fittings, in which suits and other clothing from West End tailors is sent to shops in East and Central Africa. Not only do the suits arrive in immaculate condition, ready for wear and without the creases inevitable had they been packed in cases, but also no packaging charges are involved.

Air freighting has brought important improvements, to shippers in the form of speed, economies, and improved handling, but its greatest benefit, probably, has been in breaking down former physical barriers to trade. Cargoes that could never have endured the long and rigorous journey from Central Africa by surface transport, can be flown now in less time than it takes to send goods by rail or road to parts of the British Isles.

The implications of this development are enormous and have hardly been realised yet, it demands a revolution in traditional ideas of trading both in Africa and Europe.

Special cargo being stowed in a Hunting-Clan DC-6C aircraft of the "Africargo" service

Already, however, there have been instances of the kind of radical changes in trade between Britain and Africa that is now possible.

Large quantities of pineapples from Kenya are now flown regularly by Hunting-Clan for sale in some of the best London shops and restaurants. This particular line has been developed in about two years from scratch to an average weekly consignment of two and a half tons, and in the process a considerable amount of study has gone into improving and perfecting the appearance of these excellent fruit. Other perishables that have been flown successfully have been mangoes from East Africa, and avocado pears from South Africa. There have been shipments of meat from Rhodesia which received high praise from Smithfield buyers.

It is the use of modern, fully-pressurized and air conditioned aircraft, such as the Douglas DC-6Cs employed by Hunting-Clan, that have made it possible to fly perishable goods and livestock thousands of miles with complete assurance. The pressurized cabin means that the aircraft can be flown well above the majority of storms in order to ensure an even, smooth flight. In addition, experienced Flight Assistants are carried on board who have been trained in the care of animals and the handling of delicate cargoes.

This article has attempted to indicate some of the factors that have made the speed of air freight attractive to shippers of a great variety of goods. Speed itself can be of vital importance under certain circumstances. It is often the instrument of considerable financial savings to exporters and importers. It can also bring the rare pleasures of out-of-season fruits to everyone at far less than it cost the Caliph of Cairo.

. . . because our exports to Africa are now cleared by the specialist freight service — AFRICARGO. This is the only all-cargo air service linking England and the Continent with East, Central and South Africa. Shipping by AFRICARGO ensures firm bookings, with no fear of your cargo being off-loaded, and *reliable* delivery dates.

★ Goods arrive in Africa in 24 hours

★ Specialist handling *en route*

★ Shipment in pressurised, air-conditioned DC-6C aircraft —specially designed to take bulky consignments up to 10 tons

★ Risk of obsolescence or deterioration eliminated

★ Savings in storage, insurance and handling charges

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PORT DEVELOPMENT IN GHANA

by The Harbour Authority

Takoradi Harbour

The control of Takoradi Harbour is vested in the General Manager, Ghana Railway and Harbours. The Harbour consists of two breakwaters enclosing a water area of 220 acres. Seven quay berths are situated on the lee breakwater, five of which are used for the handling of general cargo, one being leased to the African Manganese Company and one being used for shallow draft colliers and other coasting vessels. At three of these berths oil fuel can be supplied to vessels requiring bunkers. A conveyor loading berth for bauxite and an oil berth for the discharge of oil from tankers and bunkering of other vessels is provided on the seaward side in sheltered water.

All exports of cocoa and sawn timber are loaded by lighter, and a lighter wharf, 1,400 feet in length, is situated at the inner end of the harbour. Eight sets of moorings in depths varying from 30-20 feet are provided for vessels loading or discharging by lighter.

Rail and road access, transit shed and open storage accommodation and ample cranage are provided at the deepwater and lighter wharves and storage accommodation is provided for 50,000 tons of cocoa.

Tema Harbour

Construction of the new port of Tema was started in 1954 and its first stage of development is expected to be completed at the end of 1960.

The siting of the port was dictated by the need to be near the capital, Accra, the eastern terminus of the Ghana Railway and at a point on the coast where deep water was available close to the shore. Tema, a small fishing village some 17 miles east of Accra, was chosen because it fulfilled most nearly those requirements.

First stage of Development :

General Description. The water area of the harbour will be about 500 acres, protected by two rock rubble breakwaters. The main and lee breakwaters will be, respectively, about 7,000 and 4,800 feet long and provide an entrance 800 feet wide with a minimum of 42 feet depth of water. The finger quay being built in the current first stage of development will be about 1,200 feet long and 490 feet wide, providing four berths with alongside minimum water depth of 26 feet and 30 feet on the inner and outer sides respectively. Steel-framed transit sheds up to 500 feet long and 85 feet wide are being built at each berth, three being single storeyed and the fourth, at the mail boat berth, having an upper floor providing special accommodation for passengers, bonded goods and offices. Open storage space is available for rough cargo down the centre of the quay. Electric cargo cranes will be installed at all berths.

There will be an oil berth near the seawards inside end of the lee breakwater where tankers will discharge, the minimum water depth at this berth will be 36 feet. The oil pipes will run along the lee breakwater and across the eastern side of the harbour area to the Oil Tank Farm which will be outside the harbour boundary on land reclaimed from the Chemu Lagoon by the Tema Development Corporation.

The oil pipes and other ancillary installations will be privately owned by the various Oil Companies who will enter into wayleave agreements with the Railway and Harbours Administration under which they will be granted the right to lay their pipes, and other equipment in the port area.

Extensive shore works are being built covering an area of about 250 acres partly on reclaimed land and comprise railway sidings and marshalling yards as well as two large steel-framed cocoa sheds with a span of 400 feet by 170 feet capable of storing 15,000 tons of cocoa each. Sheds are also being provided for the transit storage of cement, paint, carbide and matches. A large area is being laid out for commercial warehousing and all commercial parts of the harbour area will have a road and rail access.

A reinforced concrete lighthouse 100 feet high has been built on rising ground to the east of the harbour and is equipped with the latest electric automatic light visible 20 miles out at sea.

The harbour will have two approach roads, one from the north and the other from the west, both of which are planned as 22 feet wide single carriageways.

Cargo Handling. A system of master porterage will be established at Tema. It has not yet been decided whether these services will be performed by a handling company floated for that purpose or whether the proposed organization will be operated by the Port Authority. All import and export cargo, including cocoa, will be handled by the master porterage organization. The handling of cargo through the sheds will be mechanized as far as possible and the cost of the capital equipment and its design will be the responsibility of the organization. The doors of the Transit Sheds will be 19 ft. 10 in. in height on the quay side which will permit mechanical equipment to work in and out of the sheds. On the rail side and at the ends the doors will be 15 ft. in height, the floors of the shed will be sloped upwards towards these exits to enable goods to be loaded on to vehicles on the flat. There will be a Bonded Store in Transit Shed No. 2C and all sheds will have separate cages for Customs' examination, broken packages and high duty goods respectively.

Tema will not be an oil-bunkering port and will, therefore, have no bunkering facilities at the finger quay. Vessels wishing to top-up should normally be able to do so at the oil berth.

Second stage of Development. It has been decided recently to construct four more berths on the landwards side. It is proposed that two of these berths will have an alongside depth of 26 feet LWOS and the other two of 28 feet. These extensions, which will involve the dredging of over half a million cubic yards of rock, have not yet been designed but it is expected that the work will be put out to tender by the end of 1959.

DEVELOPMENT OF PORT HARCOURT NIGERIA

The Port of Port Harcourt lies on the east bank of the Bonny River, 41 miles from the sea. The approach to the entrance of the river is over Bonny Bar, the depth of which governs all draughts entering or leaving this port. The advised draughts for the bar are : High Water Ordinary Spring Tide 22 ft. 6 in. : High Water Neaps Tide 21 ft. 6 in.

Principal commodities exported (April-March) :

	Tons 1957/1958	1958/1959
Benniseed	8,197	11,446
Bones	451	520
Cattle cake	1,231	668
Cocoa	792	969
Cotton lint	7,010	7,083
Cotton seed	9,444	15,949
Groundnuts	94,693	162,898
Hides and skins ..	178	313
Palm kernels	67,100	88,257
Rubber	640	721
Scrap iron	3,412	2,393
Soya beans	14,956	7,976
Shea nuts	—	—
Tin and columbite ..	9,416	5,733
General	6,982	10,521
Totals ..	224,502	315,447

Pilotage between Dawes Island and Port Harcourt is compulsory except for men-of-war and coasting vessels of less than 1,000 tons, whose masters hold a licence issued by the Local Pilotage Board. Pilots stationed at Port Harcourt handle all other vessels between Dawes Island and Port Harcourt.

There are at present four main berths with water depths varying from 22 feet to 24 feet, the longest is 500 and the shortest 200 feet. There is a fifth berth used for coal loading, it is 450 feet long and unsuitable for working general cargo.

In addition, there are wharves for loading petroleum and bulk palm oil and tanker mooring buoys which have a floating pipe line from shore to ship to enable bulk petroleum tankers to load and discharge at the buoys.

Single storey transit sheds are situated on the three main quays with areas of 23,500 sq. ft., 19,500 sq. ft. and 55,000 sq. ft. (the latter is a joint figure for two quays).

Other ancillary buildings for warehousing, etc., include HM Customs, Queen's Warehouse with shed space amounting to 4,000 sq. ft., two storage sheds of 4,800 sq. ft. each, a cement storage shed of 6,000 sq. ft., and four Arcon sheds each of 5,800 sq. ft., which are used for the storage of export produce. A conveyor connects the Arcon sheds to the quays which is capable of delivering bagged produce to the quay side at the rate of 80 tons per hour. In addition to the foregoing, there is available open stacking space amounting to some 22,000 sq. ft.

The cargo handling equipment in operation includes mobile cranes, mechanical horses, tractors and trailers, shunters, etc.

The wharf extension, now under construction, provides for three new berths, giving an additional overall length of main quay face of some 1,550 feet. There will be three single storey transit sheds of 52,500 sq. ft. each, a single storey warehouse of 60,000 sq. ft. and open stacking space of approximately 90,000 sq. ft. in addition to many ancillary buildings such as hazardous cargo stores, cement store and offices. There will be good road and rail access to the extension which also incorporates another large marshalling yard for rail traffic.

Arrangements are in hand to increase, substantially, the amount of cargo handling equipment available to cope with the anticipated rise in the tonnage of cargo passing through the port, when the new berths come into operation.

Space will also be available, should it prove necessary, for the construction of an additional warehouse of 60,000 sq. ft.

As a matter of general interest, the total tonnage of import and export cargo handled over the quays during the current year ending 31 March 1959, amounted to 678,021 tons, an increase of 31% over the tonnage handled during the year ended 31 March 1956, the first year of the Authority's inception.

Between April 1958-March 1959, over 630 ships entered and left Port Harcourt ; the largest number, 344, were British followed by Norwegian 71, German 53, Swedish 40, and Netherlands 37. This total figure compare with 556 vessels during the same period 1957-1958

From these 639 vessels cargo with a net registered tonnage of 1,598,964 was unloaded and 1,623,511 tons were loaded for dispatch.

Principal commodities imported (April-March) :

	Tons	
	1957/1958	1958/1959
Building materials ..	5,885	11,010
Bitumen and tar ..	2,434	3,709
Cement	112,912	115,791
Cotton goods	9,484	13,328
Enamelware	1,698	6,372
Flour	7,835	10,913
Iron and steelwork ..	53,990	37,458
Machinery	13,746	8,805
Oil in drums	6,249	5,471
Provisions and beer ..	22,913	25,263
Railway materials ..	9,013	11,411
Paints	1,598	2,460
Salt	18,729	21,462
Sugar	5,954	18,385
Stockfish	15,623	14,416
Steel sheets	5,723	10,080
Secondhand clothing ..	1,312	5,327
General	59,355	40,913
Totals ..	354,453	362,574

GOODS and SERVICES

Ethiopian Road Construction

A new road construction programme has, after much delay, been inaugurated and work will start at the end of the current rainy season. Three main roads are to be built.

(1) The Blue Nile Gorge Road (Addis Ababa-Bahar Dar). 38.2 kms costing $5.9 million. The contract has been awarded to Impresit (Italy). (2) Jimma-Agaro. 42 kms, $2.8 million. Contract given to Solel Boneh (Israel). (3) Bahar Dar-Yfag (running along the eastern shore of Lake Tana) 75 kms. The cost is not yet fixed but the contract has also gone to Solel Boneh. Foreign exchange costs will be paid from an IBRD loan, the Ethiopian Government will meet local costs.

A 42 mile road between Wondo and Adola in the south has recently been completed by the Imperial Highway Authority.

Reconstruction at Kano Airport

Taylor Woodrow (Nigeria) has been awarded a contract worth £250,000 by the Nigerian Government for reconstruction work at Kano Airport. The work will be completed in eight months, without interfering with aircraft traffic using the main runway.

Rhodesia and Nyasaland

Considerable interest has been expressed recently by the Federal Ministry of Education in various types of projection equipment, including 16mm portable sound projectors, tape recorders, portable electric gramophones, projection screens, epidiascopes and 35mm film strip projectors. Any firm wishing for further information should contact the Economic Editor, Africa Trade and Development.

South West Africa

A variety of textiles, plastic kitbags, face cloths, mattresses, counterpanes, and similar commodities are required by the South West Africa Administration. Further information available through this office.

Sudan Airways

The Sudan Airways has become a member of the International Air Transport Association (IATA).

German-Ghana Cooperation

Under an agreement just signed, the German Wahl company, manufacturing refrigerating components, are to invest in Caramafra, the Ghanaian refrigerating concern.

New Palm Line vessel launched

On 2 September a new vessel was added to the Palm Line fleet. Called the "Ilorin Palm" she will be ready for delivery in January 1960. This is the eighth vessel to be built for the Palm Line over the past few years by Swan, Hunter and Wigham Richardson Ltd., of Newcastle-on-Tyne. Two cargo liners are planned for this fleet which will be powered by 6 cylinder Doxford diesel engines for higher service speeds. They will be built by the same firm and delivery is expected in November 1960 and April 1961.

New BOAC Flights

In December, BOAC are to replace the jet-prop Britannias now flying to Johannesburg with Comet 4 airliners. These will reduce the travelling time between the two towns to 18 hours. The flights will leave London and Johannesburg daily, those from South Africa starting on 3 December and those from London on the 4th. The main flights will call at Rome, Khartoum, Nairobi, Salisbury and Johannesburg but one flight weekly each way will omit Salisbury and one flight each way will finish at Salisbury. These will be operated for BOAC by Central African Airways.

SWISS TRADE WITH AFRICA

SWISS TRADE with African markets during 1958 reached a total turnover of Sw. frs. 508 million. Exports exceeded imports by Sw. frs. 73.9 million. During the first quarter of 1959 total trade was Sw. frs. 120.2 million with exports again exceeding imports by Sw. frs. 12.4 million.

The table shows total trade between Switzerland and the African markets for 1958 and 1959 (first quarter). (Swiss francs. million):

	1958		1959 (3 months)	
	Imports	*Exports*	*Imports*	*Exports*
Egypt	25.7	59.2	3.3	16.7
Sudan	5.0	5.3	3.0	0.3
Algeria	9.4	10.4	2.0	3.0
Tunisia	3.1	3.0	0.2	0.3
Libya	0.4	2.1	0.1	0.4
Morocco	8.1	40.6	1.7	2.1
Union of South Africa	16.1	83.0	2.0	17.8
Rhodesia (Federation)	13.8	6.3	2.8	1.8
S.W. Africa	0.2	0.3	—	—
Belgian Congo	12.4	22.5	2.5	5.7
Nigeria	50.7	10.5	13.1	2.4
Ghana	16.7	9.0	13.0	2.8
Liberia	0.3	1.8	—	0.5
Fr. West Africa	9.0	5.2	1.3	1.6
Fr. Equatorial Africa	4.7	6.4	0.9	1.1
Angola	7.8	6.6	—	—
Brit. West Africa	11.8	0.8	—	—
Brit. East Africa	13.5	11.2	5.1	1.8
Madagascar	3.5	2.5	—	—
Ethiopia	5.1	1.7	1.7	0.4
Mozambique	1.2	3.6	0.2	0.7

The exports of watches and clocks during 1958 reached a total of over 2.5 million pieces. The chief importing countries were (millions) Morocco, 867, 859 ; Union of South Africa, 550,852 ; Belgian Congo, 104,104 ; Nigeria, 345,982 ; Ghana, 115,477 ; British East Africa, 182,320.

Machinery of various types was exported in 1958 to the Union of South Africa, the main items were (Sw. frs. million) Textile machinery including sewing machines, 6.5 ; dynamos, 8.1 ; steam engines, 3.6 ; machine tools, 2.4 ; food processing machinery, 1.9.

The principal commodities imported by Switzerland from the various African markets are shown in the following table (together with the total figure from main countries of origin). (Sw. frs. million.)

Commodity	*Quantity*	*Principal market*
Coffee (raw)	27.5	B.E. Africa (11.0)
Oilseeds and fruits	66.7	Nigeria (44.4)
Timber and forest products	11.8	Nigeria (3.6)
Mica and asbestos	1.2	Rhodesia
Copper bars	12.1	Rhodesia
Cocoa beans	19.1	Ghana (16.2)
Cotton (raw)	22.2	Egypt (16.7)

(*continued from page 8*)

in point where there is a definite need for an inter-territorial road link between the Federation of Rhodesia and Nyasaland and the West Coast, terminating at the port of Walvis Bay. The potential of such a road would be considerable, running, as it does, through rich pastoral country, and linking centres of mineral production (diamonds, lead, copper, vanadium and other base materials). Because of its economic significance the Road Federations of Rhodesia and South Africa are lending all possible support to proposals for giving top priority to the construction of such a road.

In West Africa, also, economic and social development awaits the provision of improved communications and an inter-territorial road here, linking the various centres, is a prime need. The itinerary to be followed would require careful survey and investigation and there is no immediately obvious route, but it is possible to envisage, for instance, that the road from Bo to Monrovia might eventually become a section of a through road linking Conakry-Freetown-Bo-Monrovia - Nzerekore - Abidjan - Takoradi - Accra - Lome-Cotonou-Lagos-Benin-Douala.

The African Continent has a great future ahead and her roads are the very sinews and arteries on the adequacy of which must depend, in large measure, her ultimate progress.

FORTE PHOTOFILMS and PAPERS

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consisting of 1 - 2 piles of rectangular types — high-speed machine type HB has been developed.

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★ Hopper feed — counting and ranging of biscuits into piles in a fully automatic way.

★ 1 or 2 wrappers from roll, outer wrap heatsealed. If desired, including tear type.

★ End fold, which leaves the large areas on the packets entirely free from folds.

★ Quick size-changeover.

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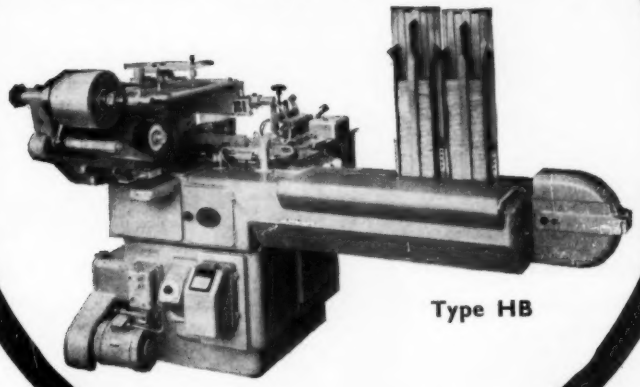

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TRADE AGREEMENTS

Ethiopia-Greece

A commercial agreement was signed in Addis Ababa on 22 May 1959 between Ethiopia and Greece. The agreement is valid for one year and will be automatically renewable unless three months' notice of termination is given by either party. No value has been given to the goods to be exchanged which are very varied. Ethiopia imports include cotton, foods both fresh and preserved, wines and beverages, sulphuric acid, pharmaceuticals and tobacco, as well as a wide range of industrial commodities and machinery. Ethiopian exports are mainly agricultural, including pepper, beeswax and coffee.

Morocco-East Germany

A trade agreement valid until March 1960, has been concluded. Total value of the contract is given as US $3.7 million. Moroccan imports are mainly agricultural equipment, fertilizers and chemicals, household goods, industrial machinery and cotton. Moroccan exports include citrus fruits, cork and cork manufactures, wool and hair, vegetables and other foodstuffs, agar-agar, essences, iron-ore and manganese.

Morocco-Yugoslavia

An extension of the trade agreement between Morocco and Yugoslavia was announced on 1 August 1959; the original agreement was signed in July 1958. The extension agreement is valid until 30 June 1960. Total values are given as 1,300 million Moroccan francs (1,176 Moroccan francs £1 sterling). Moroccan imports include various machinery and equipment (unspecified), electrical equipment including radio receivers, rayon staple and cotton fabrics, agricultural tools and other equipment. The list of Moroccan exports contains as the main items citrus fruits, manganese ore, cork, phosphates and anthracite.

Personalities

Commissioner for Sierra Leone in UK

Dr. Harbin Edmund Kelfa-Caulker, MA, Dip. Ed., HLD, has been appointed as the new Commissioner for Sierra Leone in the United Kingdom and is expected to take up his appointment by the end of 1959. Dr. Kelfa-Caulker is at present Principal of the Albert Academy in Freetown, which post he has held since 1938. He is also chairman of the Maritime and Waterfront Workers Wages Board, Deputy Chairman of the Mining Workers Wages Board and President of the Joint Council of Headmasters and Headmistresses of Secondary Schools.

New Governor for Kenya

The Hon. Sir Evelyn Baring, GCMG, KCVO, will shortly be retiring as Governor and Commander in Chief of Kenya. His place will be taken by Sir Patrick Muir Renison, KCMG, whose appointment was announced in September.

South Africa Trade Commissioner

Mr. O. J. la Grange has arrived in London to take over the post of Assistant Trade Commissioner in South Africa House, London.

New Manager for Evans Medical in Lagos

Mr. Bernard Sparling has been appointed Managing Director of Evans Medical's subsidiary company, Evans Medical (Nigeria) Ltd. He will be stationed in Lagos and left to take up his post early in September.

British Resident, Zanzibar

Sir Arthur George Rixon Mooring, CMG, has been appointed to be the British Resident in Zanzibar in succession to Sir Henry Steven Potter, KCMG, who will be retiring shortly. Sir George Mooring is at present Deputy Governor of the Western Region of Nigeria, and will take up his new post early in 1960.

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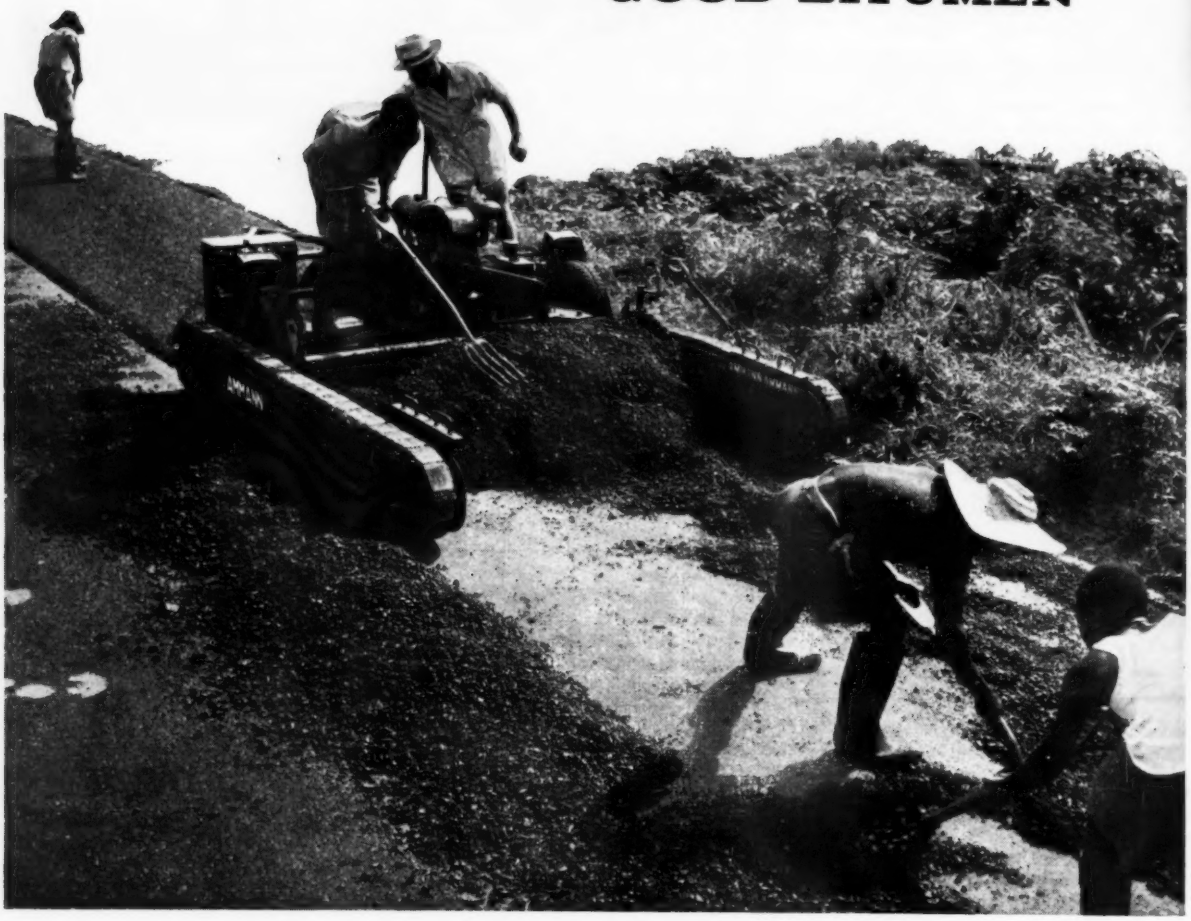
To make good roads and good aerodromes

GOOD BITUMEN



Binding and waterproof, bitumen is an important petroleum product. Bitumen is building fine surfaces for transport in all the continents of the world. A recent challenge to Shell's Research Laboratories has been to provide aerodrome runway surfaces at critical areas where kerosene spillage and the great heat of jet engines at take-off make for excessive wear. Bitumen mixed with epikote resin (another petroleum derivative), although still in the development stage, promises to be the answer.

SHELL **. . . partners in African progress**

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